

III. REMARKS

1. Claims 40-116 remain in the application. Claims 1-39 and 117 have been cancelled without prejudice.

2. Applicants respectfully submit that claims 40, 52, 58, 65, 76, 83, 94, 97, 98, 108, 111, and 114 are definite under 35 USC 112, second paragraph.

With respect to claim 40 as an example, the present Office Action states that "it is unclear what is meant by prediction of an image block as said current decoded image block and said previously decoded image block." Claims 52, 58, 65, 76, 83, 94, 97, 98, 108, 111, and 114 include similar language.

Applicants respectfully submit that the claim actually recites:

...the pixel value of at least one reconstructed pixel in at least one of said current decoded image block and said previously decoded image block is modified by filtering to produce a modified pixel value, wherein said modified pixel value is made available for use in INTRA prediction of an image block within the same image as said current decoded image block and said previously decoded image block.

Thus, an image block within the same image as both the current and previously decoded image blocks is being predicted. Therefore, claims 40, 52, 58, 65, 76, 83, 94, 97, 98, 108, 111, and 114 do point out and distinctly claim the subject matter of the invention.

3. Applicants respectfully submit that claims 40, 45-49, 51, 53, 55, 58, 61-64, 66, 76, 79-82, 91, 94-96, and 111-113 are patentable over the combination of Andrew (US 6,563,958) in view of Nishi (US 6,275,533) under 35 USC 103 (a).

The combination of Andrew and Nishi fails to disclose or suggest the pixel value of at least one reconstructed pixel in at least one of said current decoded image block and said previously decoded image block is modified by filtering to produce a modified pixel value, wherein said modified pixel value is made available for use in INTRA prediction of an image block within the same image as said current decoded image block and said previously decoded image block, as recited by claims 40, 58, 76, and 94.

The present Office Action correctly points out that Andrew fails to disclose or suggest this feature. As argued previously, Andrew is totally silent on issues relating to the prediction of pixel values, such as INTRA prediction (INTRA prediction is a technique which can be used e.g. in video coding to predict pixel values of an image to be encoded or decoded blocks from other previously encoded / decoded image blocks of the same image).

Nishi also fails to disclose or suggest this feature.

Nishi discloses an image processing method in which an image signal is divided into plural image signals corresponding to plural blocks into which an image space formed by the image signal is divided. These image signals are coded block by block into frequency components. Prediction values are generated and difference values are formed on the basis of the

difference between predicted values and actual values of the frequency components.

According to Nishi, spatially redundant information in an interlaced image or a specific progressive image can be reduced by intra prediction. The reason the Examiner has cited Nishi is that Nishi teaches the use of intra prediction and performs the intra prediction subsequently.

Applicants respectfully submit that simply disclosing intra prediction is not enough to suggest the features missing from the Andrew reference. Column 24, line 50 through column 6, line 6 and Figure 2, cited in the Office Action, discloses a conventional decoding apparatus in which predicted values and difference information are used to form reconstructed image blocks. The process is sequential in nature. However, there is nothing in Nishi that disclose or suggests filtering block boundaries. In particular, there is nothing in Nishi that discloses a previously decoded image block that is modified by filtering to produce a modified pixel value. In addition, there is nothing that even suggests that the modified pixel value is made available for use in INTRA prediction of an image block within the same image as said current decoded image block and said previously decoded image block.

At least for these reasons, the combination of Andrew and Nishi fails to disclose or suggest all the features of the independent claims.

Furthermore, Applicant respectfully submits that there is no suggestion or motivation to combine Andrew and Nishi. Applicant finds no suggestion in the nature of the problem to

be solved, in the references themselves, or in the knowledge generally available to one of ordinary skill in the art to modify or combine the references.

The Office Action suggests that the motivation for combining Andrew and Nishi would be improving the coding efficiency. Applicants respectfully disagree. The present claims are directed not to improving coding efficiency as such but to reduce visual artefacts in a digital image. While this does not eliminate coding efficiency as a benefit of prediction, it is not the primary aim of the claims.

Andrew is directed to eliminating blocking artifacts at high compression ratios. This is in contrast to Nishi which is directed to coding with high efficiency while reducing spatially redundant information. Thus, the nature of the problems to be solved by the references is notably different and does not suggest such a combination. Still further, starting with Andrew, one skilled in the art would not look to a reference that is directed to reducing spatially redundant information, as in Nishi, in order to arrive at the present invention.

Therefore, independent claims 40, 58, 76, and 94 and dependent claims 45-49, 51, 53, 55, 61-64, 66, 79-82, 91, 95, 96, and 111-113 are patentable over the combination of Andrew and Nishi.

4. Applicants respectfully submit that claims 41-44, 50, 59, 60, 77, and 78 are patentable over the combination of Andrew, Nishi and Osa et al. (US 6,496,505, "Osa") under 35 USC 103(a).

Claims 41-44, 50, 59, 60, 77, and 78 depend from claims 40, 58, or 76. Osa fails to supply the features missing from Andrew and Nishi as argued above. Therefore the combination of Andrew, Nishi, and Osa fails to render claims 41-44, 50, 59, 60, 77, and 78 unpatentable.

5. Applicants respectfully submit that claims 52, 54, 65, 67 - 73, 83 - 90, 97 - 99, 102 and 105 are patentable over the combination of Andrew, Nishi, and Keith et al. (US 5,419,513, "Keith").

Like Andrew and Nishi, Keith fails to disclose or suggest the pixel value of at least one reconstructed pixel in at least one of said current decoded image block and said previously decoded image block is modified by filtering to produce a modified pixel value, wherein said modified pixel value is made available for use in INTRA prediction of an image block within the same image as said current decoded image block and said previously decoded image block.

Therefore claims 52, 54, 65, 67-73, 83-90, 97-99, 102 and 105 are not rendered unpatentable by the cited combination.

6. Applicants respectfully submit that claims 56, 74, and 92 are patentable over the combination of Andrew, Nishi and Fukuda et al. (US 6,434,275, "Fukuda") "Fukuda") under 35 USC 103(a).

Claims 56, 74, and 92 depend from claims 40, 58, or 76. Fukuda fails to provide the features missing from Andrew and Nishi as argued above. At least for these reasons claims 56, 74, and 92 are patentable over the combination of Andrew, Nishi, and Fukuda.

7. Applicants respectfully submit that claims 57, 75, and 93 are patentable over the combination of Andrew, Nishi and Zhou (US 6,236,764) under 35 USC 103(a).

Claims 57, 75, and 93 depend from claims 40, 58, or 76. Zhou fails to supply the features of these claims missing from Andrew and Nishi and therefore the combination of Andrew, Nishi and Zhou fails to render claims 57, 75, and 93 unpatentable.

8. Applicants respectfully submit that claims 100, 103, and 106 are patentable over the combination of Andrew, Nishi, Keith, and Fukuda under 35 USC 103(a).

Claims 100, 103, and 106 depend from claims 52, 65, or 83. The combination of Keith and Fukuda fails to provide the features of the independent claims missing from Andrew and Nishi. At least for these reasons claims 100, 103, and 106 are patentable over the combination of Andrew, Nishi, Keith, and Fukuda.

9. Applicants respectfully submit that claims 101, 104, and 107 are patentable over the combination of Andrew, Nishi, Keith, and Zhou under 35 USC 103(a).

Claims 101, 104, and 107 depend from claims 52, 65, or 83. The combination of Keith and Zhou fails to provide the features of claims 52, 65, or 83 missing from Andrew and Nishi. Therefore claims 101, 104, and 107 are patentable over the combination of Andrew, Nishi, Keith, and Zhou.

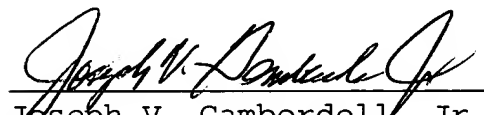
For all of the foregoing reasons, it is respectfully submitted that all of the claims now present in the application are

clearly novel and patentable over the prior art of record, and are in proper form for allowance. Accordingly, favorable reconsideration and allowance is respectfully requested. Should any unresolved issues remain, the Examiner is invited to call Applicants' attorney at the telephone number indicated below.

A check in the amount of \$1020.00 is enclosed for a three (3) month extension of time and on account of the additional claim fees.

The Commissioner is hereby authorized to charge payment for any fees associated with this communication or credit any over payment to Deposit Account No. 16-1350.

Respectfully submitted,


Joseph V. Gamberdell, Jr.
Reg. No. 44,695

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Date

Perman & Green, LLP
425 Post Road
Fairfield, CT 06824
(203) 259-1800
Customer No.: 2512

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